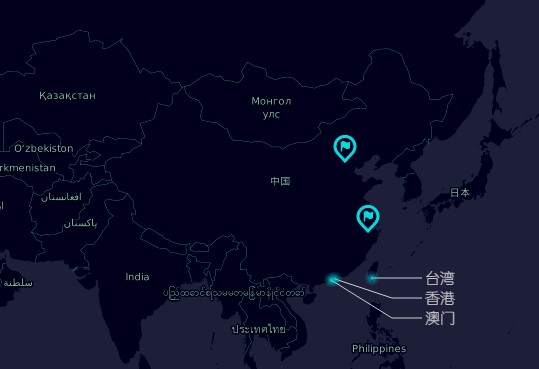
Weekly Report

1. Done
   1. Summary review comments and make a plan for future work.
   2. Modify the icon style and complete the search function of place names (automatically fit the bounds) and box selection function (eBusiness).

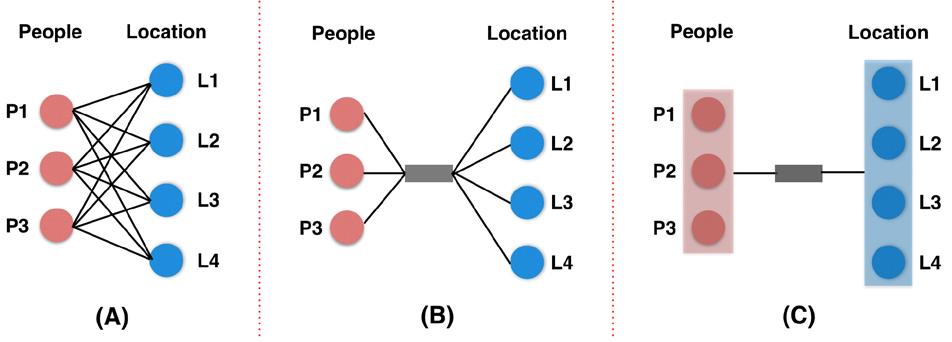


* 1. Read papers.

**BiSet: Semantic Edge Bundling with Biclusters for Sensemaking**

(from TVCG 2016)

The main idea of this paper is employing biclusters to simplify the visualization of many to many relationships as show in the figure below.



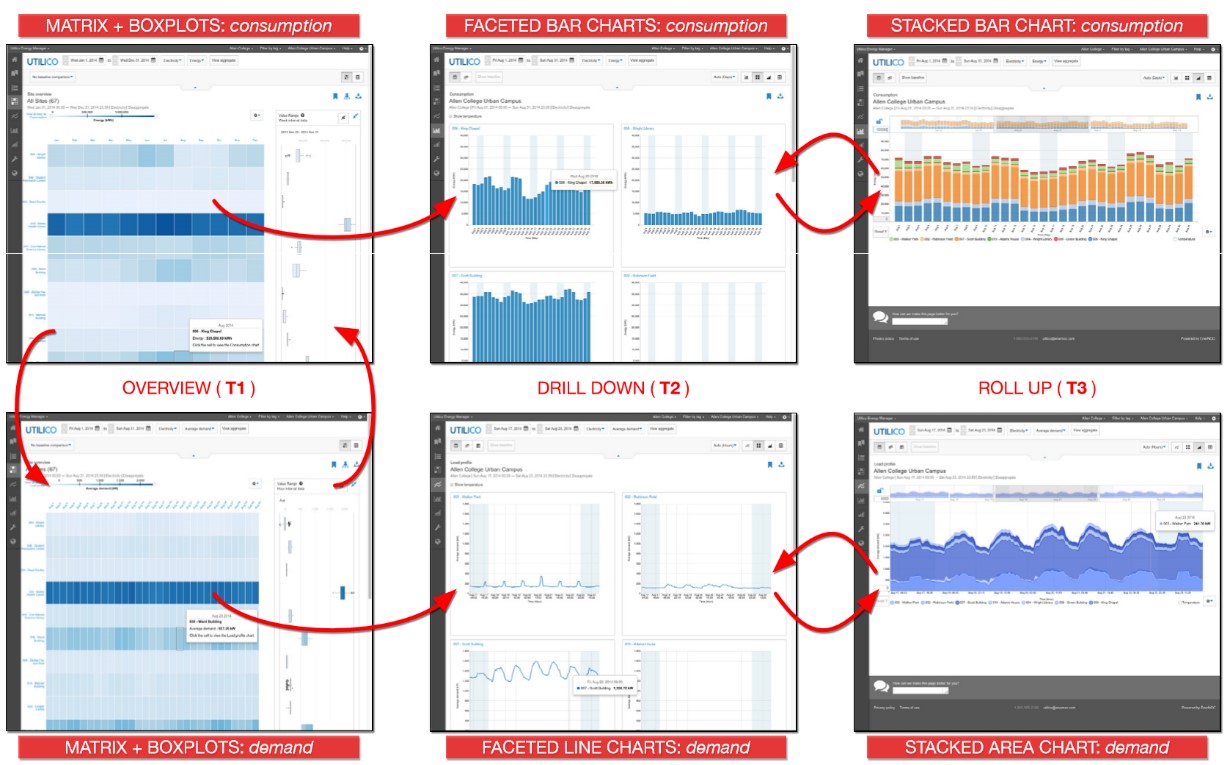
The entire system separately shows entities and relationships in a clear way, moreover, the interactive designs are very renonable. For instance, when the bundle is dragged, related entities move to new positions.

**Matches, Mismatches, and Methods: Multiple-View Workflows for Energy Portfolio Analysis**

(from TVCG 2016; The authors are Tamara and her students)

The main contribution of this paper is a methodological advice for visualization design projects, which includes considerations for designing workflows that incorporate multiple views. This energy analysis workflow can also be reflected in the task abstractions including overview, drill down and roll up.

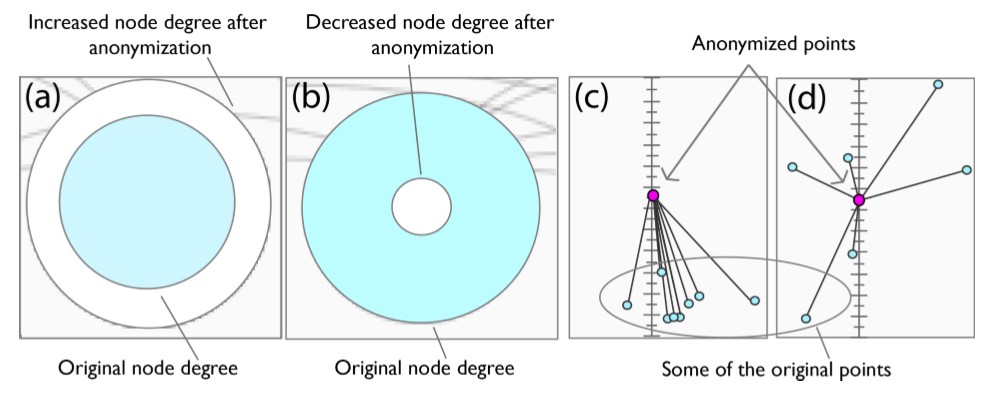
|  |  |  |
| --- | --- | --- |
| Task | How | What |
| Overview | Look up and summarize | Trends, outliers, distributions, extreme values and similarities |
| Drill down | Locate and compare | Trends, outliers and features |
| Roll up | Explore, locate and identify | Trends, outliers, features and dependencies |



Besides, visualization layouts and encodings don’t have any features.

**Using Visualization to Explore Original and Anonymized LBSN Data**

(from EuroVis 2016)



GSUVis is a visual analytic tool to help experts better understand the effects of anonymization

techniques on LBSN data utility. A variation of graph anonymizer approach (add or delete edges for graph anonymization) and a location anonymizer (based on k-anonymity) are implemented to achieve the goal. The visualization for displaying the edge modification and the visualization for location anonymizer are shown in the part a & b and the part c & d of the figure below respectively.

In addition, simple visualization design like SocialArcs and Anonymized TravelLines are proposed in this paper.

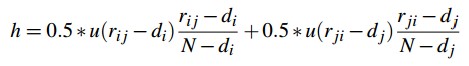
Comparing with RelationLine, GSUVis uses node-link diagram rather than real map to avoid involving privacy. However, their system can hardly considerate POI information and specific trajectory patterns.

**AmbiguityVis: Visualization of Ambiguity in Graph Layouts**

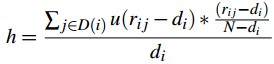
(from TVCG 2016; The authors are Qu and his students)

Metrics for abnormal edge lengths, visual overlaps in community structures etc. are proposed by them. The purposes of AmbiguityVis include evaluating node-link diagrams and assisting users to aggregate nodes and links.

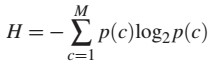
Edge length ambiguity at each edge:



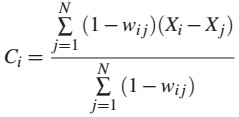
Edge length ambiguity at each node:



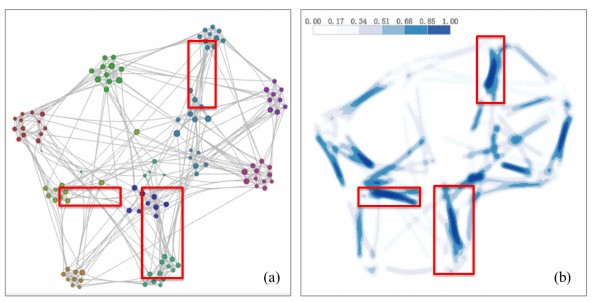
Entropy-based Metric:



Autocorrelation-based Metric:



Heatmap is used to provide an overview of ambiguities, which is calculated by KDE.

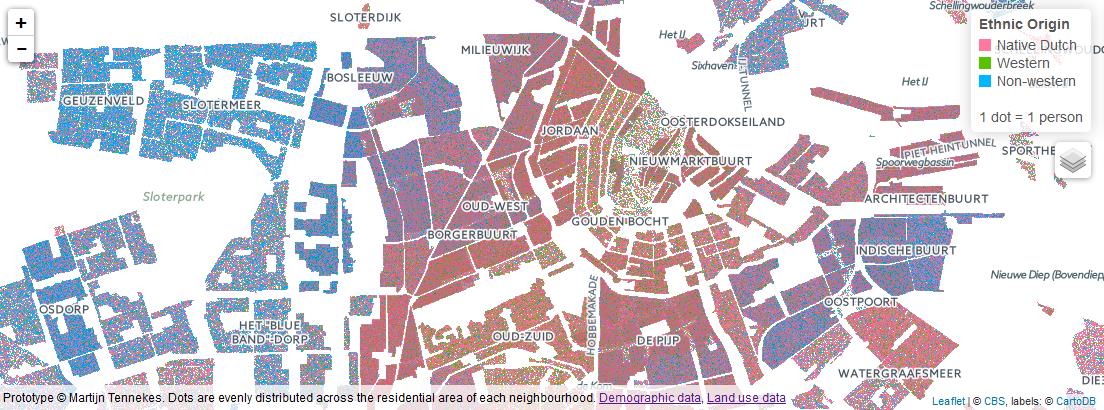


**Coloring interactive compositional dot maps**

(from EuroVis 2016)

This paper invented an approach to color the pixels of the resulting dot map based on density composition, and zoom level.

By convention, a zoom-able map needs 20 different zoom levels. A pixel of a tile in level za with a < b has a tuple which is the sum of its corresponding pixels at base level zb.



For the colors of pixels, luminance encodes the density, hue and chroma encode the composition of the categories.